

INDEX.

ABEL (F. A.) on some of the products of oxidation of cumol by nitric acid, 441.

Acid, on the relation of ozone to hyponitric, 2; action of nitric, on the resin of the *Xanthoræa hastilis*, 12; arsenious, 82; arsenic, *ib.*; antimonious and antimonic, 83; molybdic, *ib.*; tungstic, *ib.*; titanic, *ib.*; boracic, 92; phosphoric, *ib.*; action of hyponitric, upon aqueous solutions of bromine and chlorine, 143; erythric, 148; roccellic, 153; on the constitution of aqueous solutions of, 155; experiments with sulphuric, 161; observations on the, 164; experiments with muriatic, 169; observations on, 170; with nitric, 171; observations on the, 172; experiments with acetic, 173; observations on the, *ib.*; cumaric, 211; salicylic, 212; benzilic and isatinic, *ib.*; formation of cumaric and salicylic, from cumarine, *ib.*; palmic, 222; on the compounds of phosphoric, with aniline, 227, 229; on a class of organic, 235; acetic, 239; metacetonic, *ib.*; butyric, *ib.*; valerianic, 240; caproic, *ib.*; cananthyllic, *ib.*; caprylic, 241; pelargonic, *ib.*; capric, 243; on the formation of nitric, in eudiometric combustions of gases mixed with nitrogen, 245; on the presence of phosphoric, in the felspar of Jersey, 256; salts of sulphurous, 292; determination of silicic, 299; on the preparation of hippuric, 330; decomposition of valerianic, by the voltaic current, 378; on the chemical composition of metacetonic, 386; hydrates of nitric, 399; method of analysis for bodies containing nitric, *ib.*; action of nitric, on cymol, 421; formation of toluyllic and nitrotoluyllic, *ib.*; on some of the products of oxidation of cumol by nitric, 441; purification of car-

minic, 461; nitrococcusic, 469; action of nitric, on carminic, 469; properties of nitrococcusic, 472; compounds of, *ib.*

Adie (Richard) on experiments with galvanic couples immersed in pure water and in oxygenated water, 380; additions to, 391.

Æther, erythric, 150; palmic, 226; on tribasic boracic, 248, 252; formation of tribasic, 252.

Agricultural crops, on the amount of sulphur and phosphorus in various, 281.

Air and water of towns, remarks on the, 311.

Alcohol, on the preparation of absolute, 447.

Alkalies, on the constitution of aqueous solutions of, 155; determination of the, 301.

Alkali upon colouring matters, on the action of a mixture of red prussiate of potash and caustic, 320.

Allotropic substances, on the differences exhibited by, 57.

Allotropism, elementary, 97.

Alloy, analysis of an ancient Peruvian, 252.

Alloxan, on the preparation of, 42.

Alumina, on, 92, 97; on an improved method of detecting, 57; metaphosphate of, 277.

Aluminum, specific gravities and volume of, 60.

Ammonia, experiments with, 185, 187, 189; observations on the, 186, 187; specific gravity of, 192; sulphite of, 293; sulphites of copper and, 298; on the products of the decomposition of cuminate of, by heat, 404; toluylate of, 431; nitrotoluylate of, 437; nitrococcusate of, 473.

Analyses:—of the resin of *Xanthoræa hastilis*, 11; of various substances in the Guano deposits, 14; of the wax of *Ceroxylon audicola*, 25; sul-

phocarbanilide, 27; cobalt ore found in Western India, 39; struvite, 109; nitraniline and its salts, 121, *et seq.*; blue compound of cyanogen and iron, 130; erythric acid, 148; erythric aether, 150; piero-erythrin, 153; roccellic acid, 154; sulphuric acid, 162; crystals from *Asperula odorata*, 207; cumarine, 208; nitrocumarine, 214; soil deposited by drainage-water, 220, 221; palmic acid, 223; phosphate, pyrophosphate and metaphosphate of aniline, 230, 231; mixed gases, 246; tribasic boracic aether, 250; an ancient Peruvian alloy, 253; sand from St. Michael's Bay, Normandy, 257; gun-cotton, 255, 258; water of the thermal spring of Bath, 262; metaphosphates, 274; salts of sulphurous acid, 292; of Bohemian glass as found in the combustion-tubes employed in organic analysis, 299; of rain-water, 312; caffein, thein, and guaranin, 322; *Citrus aurantium*, 370; hop-ash, 392; method of, for bodies containing nitric acid, 399; cuminamide, 407; cuminonitrile, 409; nitrobenzamide, 411; pure cotton, 412; pyroxylene, 415; toluylates, 429; nitrotolylates, 432; toluol, 439.

Aniline, on, 26; on the compounds of phosphoric acid with, 227, 229; pyrophosphate of, 232; metaphosphate of, 233.

Animal chemistry, on some new researches in, 290.

Anniversary Report and Address, 140, 344.

Anthoxanthum odoratum, detection of cumarine in, 218.

Antimony, specific gravities and volume of, 61; of melted, 77; oxide of, 83; sulphuret of, 89.

Arsenic, specific gravities and volume of, 61, 70; sulphuret of, 89.

Asperula odorata, investigations of the crystals from, 206; analysis of the, 207.

Atomic volume, on, 57.

Auditors' Report, 142, 346.

Barium, specific gravity and atomic volume of, 63; peroxide of, 84.

Baryta, toluylate of, 429; nitrotolylate of, 432; nitrococcus of, 474.

Barytes, 84; palmate of, 225; metaphosphate of, 278.

Bath, analysis of the water of the thermal spring of, 262.

Bismuth, specific gravities and volume of, 60; of melted, 75; oxide of, 82; sulphuret of, 89; on the nitrates of, 480.

Bleibtreu (Hermann) on cumarine, 205.

Boron, 91.

Bowman (J. E.) on tribasic boracic aether, 248.

Bromine, action of hyponitric acid upon aqueous solutions of, 143.

Bunsen (Prof.) on an instrument for graduating glass tubes invented by, 54.

Cadmium, specific gravities and volume of, 60; oxide of, 82; sulphuret of, 89; sulphites of, 295.

Caffein, on the composition of, 321; and bichloride of platinum, 324; and nitrate of silver, 325; chloride of mercury and, 326; and terchloride of gold, 327.

Calvert (F. C.) on the preparation and composition of the oxides of lead and their combinations with nitric acid and ammonia, 205.

Carbon, 91.

Carminic acid, purification of, 461; action of nitric acid on, 469; investigation of the mother-liquor from which the, is separated, 477.

Catalytic bodies, on transformations produced by, 348.

Ceroxylon audicola, analysis of, 25.

Chamerops, on the wax of the, 24.

Chemical apparatus, on some improved forms of, 315.

Chemistry, on some new researches in animal, 290.

Chlorine, action of hyponitric acid upon aqueous solutions of, 143.

Chromium, specific gravities and volume of, 60; oxide of, 82; sesquisulphuret of, 88; metaphosphate of oxide of, 278.

Citrus aurantium, analysis of the ashes of, 370.

Coal-mines, on the composition of the fire-damp of the Newcastle, 7.

Coathupe (C. T.) on gun-cotton, 329.

Cobalt, specific gravities and volume of, 59, 70; protoxide and peroxide

of, 81; bisulphuret of, 88; metaphosphate of oxide of, 277.

Cochineal, on, 454; on a new body obtained from, 110; microscopic examination of living, 459; on the separation of the colouring matter from, *ib.*

Coccus Cacti, 454.

Copper, on certain impurities in commercial sulphate of, 2; specific gravities and volume of, 60, 66, 70; of melted, 77; suboxide of, 81; protoxide of, 82; subsulphuret and sulphuret of, 88; metaphosphate of oxide of, 278; sulphites of, 296; and soda, 297; and ammonia, 298; toluylate of, 430; nitrotoluylate of, 437; nitrococcusate of, 476; on the nitrates of, 480, 484.

Creatin and creatinin in urine, on, 399.

Crum (Walter) on a method of analyses for bodies containing nitric acid, 399.

Crystalline forms, Haiiy's table of, compared with the system now proposed, 535.

Crystallography, on, 486.

Crystallonome, description of a, 486.

Crystals, notation and classification of, 529; synopsis of forms, 536.

Cumarine, 205; preparation of, from Tonka beans, 208; composition of, 209; products of decomposition of, *ib.*; formation of cumaric and salicylic acid from, 212; detection of, in *Anthoxanthum odoratum*, 218.

Cuminamide, 406; analysis of, 407.

Cumol, on some of the products of oxidation of, by nitric acid, 441; composition of, 444.

Cumonitrile, 408; analysis of, 409.

Cyanogen, on the blue compounds of, and iron, 125; determination of, 129; iodide of, in the iodine of commerce, 321.

Cymol, preparation of, 421; action of nitric acid on, 425.

Daguerreotype plates, instrument for holding, in washing off, 318.

De la Rue (Warren) on a new body obtained from cochineal, 110; on a modification of the apparatus of Varrentrapp and Will for the estimation of nitrogen, 347; on cochineal (*Coccus Cacti*), 454.

Dimorphism, on, 93.

Dinitrobenzol, on a new product of decomposition of, 111.

Drinkwater (Joseph) on the preparation of absolute alcohol and the composition of "proof spirit," 447.

Ebelmen (M.) on the formation of tribasic æther, 252.

Electricity, influence exerted by, upon the luminosity of phosphorus, 104; on the oxidizing power of oxygen when disengaged by means of voltaic, 285.

Electrolysis, on the theory of, 47.

Electrolytes, on the unequal distribution of, 47.

Elements, non-metallic, and their oxides, 91; volumes of, 92.

Endosmose, on electrical, 28.

Ethyl, toluylate of oxide of, 430; analysis of, *ib.*; nitrotoluylates of, 434.

Eudiometric combustions of gases mixed with nitrogen, on the formation of nitric acid in, 245.

Felspar of Jersey, on the presence of phosphoric acid in the, 256.

Field (Frederick) on the products of the decomposition of cuminate of ammonia by heat, 404.

Fire-damp, on the composition of the, of the Newcastle coal-mines, 7.

Fordos (M.), cyanic compound obtained from gun-cotton by, 261.

Fownes (George) on the presence of phosphoric acid in the felspar of Jersey, 256.

Frankland (E.) on the chemical constitution of metacetonic acid and some other bodies related to it, 386.

Galloway (Robert), analysis of the water of the thermal spring of Bath, 262.

Galvanic couples immersed in pure water and in oxygenated water, experiments with, 380.

Gas, on a new eudiometric process for the absorption of oxygen, from atmospheric air, 46.

Gases:—examination of Gateshead, 7; of Killingworth, *ib.*; on the formation of nitric acid in eudiometric combustions of, mixed with nitrogen, 215.

Gelis (M.), cyanic compound obtained from gun-cotton by, 261.

Gladstone (John Hall), analysis of sand from St. Michael's Bay, Normandy, 257; on the chemical history of gun-cotton and xyloidine, 412; on the nitrates of bismuth and copper, 480.

Glass, analysis of the Bohemian, as found in the combustion-tubes employed in organic analysis, 299.

Glass tubes, on an instrument for graduated, 54.

Glucina, 93.

Gold, specific gravities and atomic volume of, 62; caffein and terchloride of, 327.

Goniometer, description of a new, 486.

Graham (Professor) on the composition of the fire-damp of the Newcastle coal mines, 7; on a new eudiometric process for the absorption of oxygen gas from atmospheric air, 46; reply to the observations of M. Pierre on the proportion of water in the magnesian sulphates and double sulphates, 110; on the supply of iodine from the kelp of Guernsey, 252.

Gregory (Dr. W.) on the preparation of alloxan, 42; on the preparation of hippuric acid, 330.

Griffin (John Joseph) on the constitution of aqueous solutions of acids and alkalies, 155.

Grove's experiments on the decomposition of water, observations on the theory of, by Dr. G. Wilson, 332.

Guanite, measurements of, 17.

Guano deposits, on substances found in the, 13; analysis of, 14, *et seq.*

Guernsey, on the supply of iodine from the kelp of, 252.

Gum-resin of New Holland, on the yellow, 10.

Gun-cotton, on, 253, 329; on the chemical composition of, 258; on a new vegeto-alkali in, 287; on the chemical history of, 412.

Haüy's table of crystalline forms compared with system now proposed, 535.

Hofmann (A. W.) on aniline, 26; on nitraniline, a new product of decomposition of dinitrobenzol, 111.

Hop-ash, analysis of, 392.

How (Henry), analysis of an ancient Peruvian alloy, 252; analysis of the ashes of the orange-tree (*Citrus aurantium*), 370.

Hydrates, on the theory of the aqueous solution of, 183; of nitric acid, 399.

India, analysis of a cobalt ore found in Western, 39.

Iodine, 92; on the supply of, from the kelp of Guernsey, 252.

Iridium, specific gravities and atomic volume of, 63; elementary allotropism of, 97.

Iron, specific gravity and volume of, 59, 70; peroxide of, 80; magnetic oxide of, 81; subsulphuret, sulphuret, sesquisulphuret and bisulphuret of, 88; on the blue compounds of cyanogen and, 125; metaphosphate of peroxide of, 277; sulphites of the protoxide of, 293; of the peroxide of, 294; determination of alumina and sesquioxide of, 300; on the decomposition of water by platinum and the black oxide of, at a white heat, 332.

Jersey, on the presence of phosphoric acid in the felspar of, 256.

Joule (J. P.) on atomic volume and specific gravity, 57, 199.

Kelp of Guernsey, on the supply of iodine from the, 252.

Kolbe (H.) on the formation of nitric acid in eudiometric combustions of gases mixed with nitrogen, 245; on the oxidizing power of oxygen when disengaged by means of voltaic electricity, 285; on the decomposition of valerianic acid by the voltaic current, 278; on the chemical constitution of metacetonic acid, and some other bodies related to it, 386.

Lead, specific gravity and volume of, 62, 67; of melted, 74; suboxide of, 83; protoxide of, 84; peroxide of, *ib.*; sulphuret and sesquisulphuret of, 89; palmate of, 225.

Leeson (Dr.) on crystallography, with a description of a new goniometer and crystallonome, 486.

Liebig (Prof.) on some new researches in animal chemistry, 290; on creatin and creatinin in urine, 399.

Lime, 86; metaphosphate of, 279; determination of, 300; toluylate of, 431; nitrotoluylate of, 434; tables of

rhombohedral modifications of carbonate of, 513.

Maddrell (Robert) on the metaphosphates, 273.

Magnesia, 86; experiments with the sulphate of, 197; observations on the, *ib.*; metaphosphate of, 279; determination of, 300; on the measurement of the double sulphates of, and soda, 391.

Magnesium, specific gravity of, 73.

Manganese, specific gravities and volume of, 59; protoxide and sesquioxide of, 80; sulphuret of, 87; metaphosphate of protoxide of, 277; determination of oxide of, 300.

Manure, on the preparation of a fixed, from urine, 302.

Mercer (John) on the action of a mixture of red prussiate of potash and caustic alkali upon colouring matters, 320.

Merck (George), analysis of the water of the thermal spring of Bath, 262.

Mercury, specific gravity and atomic volume of, 62; specific gravity of fluid, 78; suboxide of, 84; protoxide of, *ib.*; chloride of, and caffeine, 326.

Metallic elements, specific gravities and volumes of, 59, 64.

Metals, volumes of, and other simple bodies, 69; specific gravity of, in a finely-divided state, 70, 73; of melted, 73, 78; oxides of the, 80; oxides of, of unknown specific gravity, 91.

Metaphosphates, on the, 273.

Methyl, nitrotolulylate of oxide of, 435.

Middleton (J.), analysis of a cobalt ore found in Western India, 39.

Miller (W. H.) on the measurements of the double sulphates of zinc and soda, and of magnesia and soda, 391.

Minium, 84.

Molybdenum, specific gravities and volume of, 61; oxide of, 83; sulphuret of, 89.

Muspratt (James Sheridan) on nitraniline, a new product of decomposition of dinitrobenzol, 111; on the salts of sulphurous acid, 292.

Napier (James) on electrical endosmose, 28; on the unequal decomposition of electrolytes, and the theory of electrolysis, 47.

Nesbitt (J. C.) on an improved method of detecting alumina, 57.

Newcastle coal mines, on the composition of the fire-damp of the, 7.

New Holland, on the yellow gum resin of, 10.

Nicholson (Edward Chambers) on the compounds of phosphoric acid with aniline, 227; on the composition of caffeine, and of some of its compounds, 321.

Nickel, specific gravities and volume of, 59, 70; protoxide and peroxide of, 81; subsulphuret of, 88; metaphosphate of oxide of, 276; sulphites of, 295.

Nitraniline, 111; preparation of, 119; composition of, 120; properties of, 121; compounds of, 122; products of the decomposition of, 124.

Nitrobenzamide, 411; analysis of, *ib.*

Nitrocumarine, 213.

Nitrococcus acid, 469; compounds of, 472.

Nitrogen, on the formation of nitric acid in eudiometric combustions of gases mixed with, 245; on a modification of the apparatus of Varntrapp and Will for the estimation of, 347.

Nitrotolulylic acid, composition of, 432; action of sulphuric and nitric acids on, 437.

Noad (H. M.) on the action of nitric acid on cymol, 421.

Officers and Council, in 1846, 143; in 1847, 347.

Opal, 96.

Orange-tree, analysis of the ashes of the, 370.

Ore, cobalt, analysis of, found in Western India, 39.

Osmium, specific gravity and atomic volume of, 63; elementary allotropism of, 97.

Oxide, manganoso-manganic, 80.

Oxides, atomic volumes and specific gravities of the metallic, 85.

Oxygen gas, on a new eudiometric process for the rapid absorption of, from atmospheric air, 46.

Oxygen, on the oxidizing power of, 285.

Ozone, on the relation of, to hyponitric acid, 2; chemical and voltaic, destroyed by gaseous substances, 105.

Palladium, specific gravity and atomic volume of, 62; elementary allotropism of, 98.

Palmitic acid, 222.

Palmin, 226.

Peruvian alloy, analysis of an ancient, 252.

Phosphorus, 91; specific gravity of, 69; of melted, 76; influence exerted by electricity, platinum and silver upon the luminosity of, 104; on the amount of, in various agricultural crops, 281.

Picro-erythrin, 151.

Pierre (M.) on the proportion of water in the magnesian and double sulphates, Prof. Graham's reply to the observations of, 110.

Piesse (S.) on certain impurities in commercial sulphate of copper, 2.

Platinum, on some chemical effects produced by, 17; specific gravities and atomic volume of, 62, 72; sulphuret and bisulphuret of, 89; elementary allotropism of, 97; influence exerted by, upon the luminosity of phosphorus, 104; sponge, specific gravity of, 69; caffein and bichloride of, 324; on the decomposition of water by, and the black oxide of iron at a white heat, 332.

Playfair (Dr.) on an instrument for graduating glass tubes, invented by Prof. Bunsen, 54; on atomic volume and specific gravity, 57, 199; on palmitic acid, a fat acid related to the margaryl series, 222; on transformations produced by catalytic bodies, 348.

Polymorphism, on, 93.

Polymorphous substances, on the differences exhibited by, 57.

Potash, 84; experiments with anhydrous, 176; observations on the, *ib.*; with carbonate of, 178; observations on the, 179; metaphosphate of, 280; on the action of a mixture of red prussiate of, and caustic alkali upon colouring matters, 320; toluylate of, 431; nitrotoluylate of, 436; nitrococcusate of, 472.

Potassium, specific gravity and atomic volume of, 63; of melted, 76.

Porrett (R.) on the chemical composition of gun-cotton, 258; on the existence of a new vegeto-alkali in gun-cotton, 287.

Proof-spirit, composition of, 447, 452.

Pyroxylene, 413; analysis of, 415.

Quartz, 96.

Redtenbacher (Joseph) on a class of organic acids, 235.

Reeks (Trenham) on the action of a solution of caustic soda upon a stoneware jar, 315.

Report of the Council in 1846, 140; in 1847, 344.

Resin of the *Xanthoræa hastilis*, 10; action of nitric acid on, 12.

Rhodium, specific gravities and atomic volume of, 62.

Roccella tinctoria, on the substances contained in the, 144.

Rowney (Thomas), analysis of the Bohemian glass as found in the combustion-tubes employed in organic analysis, 299.

Rowney (T. H.), analysis of the ashes of the orange-tree (*Citrus aurantium*), 370.

Sal-ammoniac, experiments with, 193; observations on the, 194.

Salts of sulphurous acid, on the, 292.

Sand, analysis of, from St. Michael's Bay, Normandy, 257.

Scanlan (M.) on iodide of cyanogen in the iodine of commerce, 321.

Schœnbein (Dr. C. F.) on the relation of ozone to hyponitric acid, 2; on some chemical effects produced by platinum, 17; on the influence exerted by electricity, platinum and silver upon the luminosity of phosphorus, 104; on the action of hyponitric acid upon aqueous solutions of bromine and chlorine, 143.

Schunck (Edward) on the substances contained in the *Roccella tinctoria*, 144.

Selenium, 91.

Selenaldine, 303, 310.

Silica, 92.

Silver, specific gravities and atomic volume of, 62, 65; of melted, 78; oxide of, 84; sulphuret of, 89; influence exerted by, upon the luminosity of phosphorus, 104; preparation of nitrate of, 159; caffein and nitrate of, 325; toluylate of, 429; nitrotoluylate of, 433; nitrococcusate of, 475.

Smith (Arthur) on the hydrates of nitric acid, 399.

Smith (Dr. R. A.) on the preparation of a fixed manure from urine, 302; on the air and water of towns, 311.

Soda, 84; preparation of carbonate of, 159; experiments with carbonate of, 181; observations on the, 182; metaphosphate of, 280; sulphite of, 292; bisulphite of, 293; on the action of a solution of caustic, upon a stoneware jar, 315; on the measurements of the double sulphates of zinc and, 391; toluylate of, 431; nitrotoluylate of, 437.

Sodium, specific gravities and atomic volumes of, 63.

Soils, on the solvent action of drainage water on, 219.

Sorby (H. C.) on the amount of sulphur and phosphorus in various agricultural crops, 281.

Specific gravity, on, 57, 199.

Sponge, specific gravity of platinum, 69.

Stenhouse (John) on the resin of the *Xanthorea hastilis*, or yellow gum-resin of New Holland, 10.

St. Michael's Bay, Normandy, analysis of sand from, 257.

Strontia, 84; nitrotoluylate of, 437.

Strontian, metaphosphate of, 279.

Strontium, specific gravity and atomic volume of, 63.

Struvite, a new mineral, 106.

Sugar, experiments with, 196; observations on the, *ib.*

Sulphates, magnesian and double, reply to the observations of M. Pierre on the proportion of water in the, 110; on the measurements of the double, of zinc and soda, and magnesia and soda, 391.

Sulphur, specific gravity of, 68; specific gravity and atomic weight of flowers of, 72, 73; specific gravity of melted, 76; in the viscid melted state, 77; elementary allotropism of, 99; on the amount of, in various agricultural crops, 281.

Sulphurets, 87; volumes of certain, 90.

Tanning, on the means of testing the comparative value of astringent substances for the purposes of, 319.

Taylor (Thomas) on some improved forms of chemical apparatus, 315.

Tellurium, specific gravities and volume of, 62.

Teschemacher (E. F.) on various substances in the guano deposits and in their vicinity, 13; on gun-cotton, 253; on the chemical composition of gun-cotton, 258.

Teschemacher (J. E.) on the wax of the *Chamaerops*, 24.

Tetra-hydrate of nitric acid, 403.

Thialdine, on, 303; hydrochlorate of, 307; nitrate of, 308.

Thomson (Dr. R. D.) on the fattening of cattle, 205.

Thorium, oxide of, 92.

Tin, specific gravities and volume of, 61, 69; of melted, 74; oxide and peroxide of, 82; sulphuret and bisulphuret of, 89.

Titanium, specific gravity and volume of, 62.

Toluol, 437; analysis of, 439.

Toluyllic acid, composition of, 427; properties of, 428; compounds of, 429; products of the decomposition of, 431.

Tonka beans, preparation of cumarine from, 208.

Treasurer's Report, 1846, 141; 1847, 346.

Tungsten, specific gravities and volume of, 62.

Ulex (G. L.) on struvite, a new mineral, 106.

Uranic oxide, hydrated, 83.

Uranium, specific gravity of, 72.

Uranoso-uranic oxide, 83.

Uranous oxide, 83.

Urine, on the preparation of a fixed manure from, 302; on creatin and creatinin in, 399.

Varrentrapp's (M.) chemical apparatus for the estimation of nitrogen, improved form of, 318; on the modification of the apparatus, 347.

Varvicide, 80.

Vegeto-alkali in gun-cotton, on a new, 287.

Voltaic current, on the decomposition of valerianic acid by the, 378.

Warington (Robert) on the means of testing the comparative value of astringent substances for the purposes of tanning, 319.

Water, atomic volume of, 160 ; on the maximum density of, 199 ; solvent action of drainage, on soils, 219 ; of the thermal spring of Bath, analysis of the, 262 ; and air of towns, 311 ; on the decomposition of, by platinum and the black oxide of iron at a white heat, 332 ; on experiments with galvanic couples immersed in pure and oxygenated, 380.

Watts (Henry) on the analysis of hop-ash, 392.

Wax of the Chamærops, on the, 24.

Williamson (Alexander W.) on the blue compounds of cyanogen and iron, 125.

Wills' (Dr.) chemical apparatus for the estimation of nitrogen, improved form of, 318 ; on a modification of the apparatus, 347.

Wilson (John) on the solvent ac-

tion of drainage-water on soils, 219.

Wilson (Dr. George) on the decomposition of water by platinum and the black oxide of iron at a white heat, with some observations on the theory of Mr. Grove's experiments, 332.

Wöhler (Prof.), on thialdine and selenaldine, two new artificial organic bases, 303.

Xanthoræa hastilis, on the resin of the, 10.

Xyloidine, on the chemical history of, 412.

Yttria, 93.

Zinc, specific gravities and volume of, 60, 66 ; of melted, 75 ; oxide of, 81 ; sulphuret of, 88 ; on the measurements of the double sulphates of, and soda, 391.

Zirconia, 93.

END OF VOL. III.

